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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/561,975	05/22/2006	Markus Flik	1006/0117PUS1	1615
60601	7590	12/04/2009		
Muncy, Geissler, Olds & Lowe, PLLC P.O. BOX 1364 FAIRFAX, VA 22038-1364			EXAMINER LEO, LEONARD R	
			ART UNIT 3744	PAPER NUMBER
			MAIL DATE 12/04/2009	DELIVERY MODE PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

### Office Action Summary

**Application No.**

10/561,975

**Applicant(s)**

FLIK ET AL.

**Examiner**

Leonard R. Leo

**Art Unit**

3744

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 14 September 2009.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-24, 27 and 28 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-24, 27 and 28 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO/S5108)  
Paper No(s)/Mail Date 9/09
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_\_

### **DETAILED ACTION**

The amendment filed on September 14, 2009 has been entered. Claims 25-26 are cancelled, and claims 1-24 and 27-28 are pending.

#### ***Claim Objections***

Claims 11 and 27 are objected to because of the following informalities: the recitation of "joins" in claim 11, line 4 should read -- joints --, and the second recitation of "assembly" in claim 27, line 13 should read -- path --. Appropriate correction is required. The word "join" is a verb, not a noun. Further, the word "joins" is a verb tense of "join."

#### ***Claim Rejections - 35 USC § 112***

The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

Claim 15 is rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

The specification lacks an adequate written description of the invention. There is no basis for a leak tightness sensor 70 in the specific location as depicted in Figure 1.

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 1-4, 8-17, 19-24 and 27-28 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

The term “generally planar” in claims 1 and 27 is a relative term which renders the claim indefinite. The term “generally planar” is not defined by the claim, the specification does not provide a standard for ascertaining the requisite degree, and one of ordinary skill in the art would not be reasonably apprised of the scope of the invention. As evidenced by claim 8, the “generally planar surface” has a profile for turbulence. As evidenced by claim 28, the “generally planar surface” has projections or depressions for flow alteration.

#### ***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1-13, 16-17, 19, 22-24 and 27-28 are rejected under 35 U.S.C. 102(b) as being anticipated by Furukawa et al. Figure 1 discloses three flow devices for fluids La, Lb, Lc, each having a fluid collection and/or distribution device and fluid outflow device since the devices are connected in fluid circuits; two flow assemblies 13A, 13B, each having plural flow elements 15 (Figure 2) connected in liquid-tight and positively locking manner; flow paths f1, f2, f3 lying in parallel planes; and flow assemblies 13A, 13B are connected in series in a positively locking

manner. Furthermore, each flow element 15 has a front, rear and first and second sides (i.e. peripheral, paragraph 29) bounding a “generally planar surface.”

Regarding claim 2, Furukawa et al discloses the flow elements 15 are plates.

Regarding claims 3-4, Figure 2 discloses simple openings in the flow elements 15.

Regarding claims 5-8, 17 and 28, Figure 3 discloses flow elements 15 have turbulence-generating and/or turbulence-increasing shaped profiles, which are read as “grooves” or “depressions.”

Regarding claims 9-11 and 13, Figures 2 and 4 discloses positively locking flow elements 15 about their periphery.

Regarding claims 12 and 16, Figure 2 discloses thermal insulating separation 16 bounded by a peripheral flange, which is read as the “sealing element.”

Regarding claims 19 and 23, the counter flow paths f1, f2, f3 of Figure 2 provides a constantly decreasing temperature gradient.

Regarding claims 22 and 24, it has been held that a recitation with respect to the manner in which a claimed apparatus is intended to be employed does not differentiate the claimed apparatus from a prior art apparatus satisfying the claimed structural limitations. *Ex parte Masham*, 2 USPQ2d 1647 (1987).

Regarding claim 27, Figure 2 of Furukawa et al discloses a first flow path La begins in the first flow assembly 13A and ends in the second flow assembly 13B, the second flow path Lc begins and ends in the first assembly 13A and the third flow path Lb begins and ends in the second assembly 13B.

***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 14-15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Furukawa et al in view of Bond.

Furukawa et al discloses all the claimed limitations except a leak tightness control opening.

Bond discloses a plate heat exchanger comprising a plurality of flow elements 1, 2 with simple openings 3-6 and sealing elements 7a, 8, 9 and leak tightness sensor 13 extending through a control opening for the purpose of detecting integrity failure (column 2, line 67 to column 3, line 12).

Since Furukawa et al and Bond are both from the same field of endeavor and/or analogous art, the purpose disclosed by Bond would have been recognized in the pertinent art of Furukawa et al.

It would have been obvious at the time the invention was made to a person having ordinary skill in the art to employ in Furukawa et al sealing elements with a leak tightness sensor extending through a control opening for the purpose of detecting integrity failure as recognized by Bond. This use of gaskets and bonded flow elements are obvious variants of each other.

Claims 18 and 20-21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Furukawa et al in view of Wennerberg.

The device of Furukawa et al lacks a further inflow device.

Wennerberg (Figures 3 and 12) discloses a plate heat exchanger comprising a plurality of flow elements *P* with simple openings 1-5, wherein of the openings is a further flow device 5 for the purpose of combining or mixing the fluid flows.

Since Furukawa et al and Wennerberg are both from the same field of endeavor and/or analogous art, the purpose disclosed by Wennerberg would have been recognized in the pertinent art of Furukawa et al.

It would have been obvious at the time the invention was made to a person having ordinary skill in the art to employ in Furukawa et al a further flow device for the purpose of combining or mixing the fluid flows as recognized by Wennerberg.

Regarding claim 21, Figure 2 of Wennerberg discloses flow dividing.

### ***Response to Arguments***

The objection to the drawings under 37 CFR 1.83(a) is withdrawn.

The rejections under 35 U.S.C. 112, second paragraph, are withdrawn in view of the amendment.

Applicant's arguments have been fully considered but they are not persuasive.

Regarding applicant's remarks with respect to the anticipatory rejection in view of Furukawa et al, each element 15 of Furukawa et al (paragraph 29) has a peripheral flange bounding a "generally planar surface."

Regarding claim 5, the corrugated profile of element 15 provides turbulence. As fundamentally well known in the art of fluid mechanics, a corrugated plate offers more resistance and generates turbulence versus a flat plate.

Regarding claim 18, Figure 3 of Wennerberg discloses fluids from ports 1 and 2 being admixed and exhausted to either ports 5 or 9.

### ***Conclusion***

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Leonard R. Leo whose telephone number is (571) 272-4916. The examiner can normally be reached on Monday thru Friday.



If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Cheryl Tyler can be reached on (571) 272-4834. The fax phone number for the organization where this application or proceeding is assigned is (571) 273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

/ Leonard R. Leo /  
PRIMARY EXAMINER  
ART UNIT 3744

December 5, 2009